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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,313	08/06/2003	Kalyan P. Gokhale	E20020180-D1	8091
7590	07/14/2004			EXAMINER
Michael M. Rickin, Esq. ABB Inc. Legal Department - 4U6 29801 Euclid Avenue Wickliffe, OH 44092-2530			KIM, PAUL D	
			ART UNIT	PAPER NUMBER
			3729	
DATE MAILED: 07/14/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/635,313	GOKHALE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Paul D Kim	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
 THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 03 June 2004.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 9, 10 and 22-37 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 9, 22-24, 32, 33 and 35-37 is/are rejected.
- 7) Claim(s) 10, 25-31 and 34 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 03 June 2004 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____ .  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/3/04</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____ .                                  |

## DETAILED ACTION

This office action is a response to the election of species requirement filed on 6/3/04.

### ***Response to the Election of Species***

1. Applicant's election of Species B, claims 9, 10 and newly submitted claims 22-37, in the reply filed on 6/3/04 is acknowledged. The traversal is on the ground that the amended claims have a number of generic claims of 9, 22, 25-27, 32 and 35-37. Upon further consideration with applicant's arguments, examiner agrees with the applicant's counsel that the elected Species B now has claims 9, 10 and 22-37 including a number of generic claims of 9, 22, 25-27, 32 and 35-37. Further more, the election of species as set forth mailed on 4/29/04 is hereby withdrawn.

The requirement is still deemed proper and is therefore **made FINAL**.

### ***Drawings***

2. The drawings were received on 6/3/04. These drawings are accepted.

### ***Specification***

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: --A METHOD FOR MAKING A NON-LINEAR  
INDUCTOR--

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 24 the phrase "the length" as recited in line 2 lacks antecedent basis.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 9, 22-24, 32, 33 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elms (US PAT. 4,162,428) in view of Boggavarapu (US PAT. 4,323,823).

Elms teaches a process of making an inductor comprising steps of: providing a plurality of first laminations 10b of magnetic material, each of the first laminations having a first leg (16b) with an edge and at least one other leg (14b,18b) as shown in Fig. 3; providing a plurality of second laminations 20b of magnetic material, each of the second laminations having the same predetermined shape as shown in Fig. 3; stacking the first

laminations to produce a first stack with a first leg portion (16b) and at least one other leg portion (14b, 18b), the first leg portion comprising the first legs and the at least one other leg portion comprising the at least one other leg as shown in Fig. 3; stacking the second laminations to produce a second stack (20a) as shown in Fig. 3; disposing the first stack adjacent to the second stack so as to form an air gap with two or more different widths (26b, 28b) between the first leg portion and of the first stack and the second stack as shown in Fig. 3; and disposing a winding (42b, 30b) around the first leg portion or the at least one other leg portion of the first stack as shown in Fig. 3 (also see col. 1, lines 46-60 and col. 4, lines 8-34).

As per claims 22 and 32 Elms teaches that the air gap comprises a first portion (26b) having a first width and a second portion (28b) having a second width, the first and second widths being different as shown in Fig. 2 (as per claim 22). The first lamination is E-shape (as per claims 32 and 33) and the center leg (16b) is disposed between the pair of end legs (14b, 18b) as shown in Fig. 3.

As per claim 33 the air gaps (26b, 28b) of Elms are arranged adjacent to each other in the direction between the end leg portions of the first stack as shown in Fig. 3.

As per claim 35 Elms teaches that the winding is disposed around the center leg portion of the first stack as shown in Fig. 3.

As per claim 36 Elms teaches that the second lamination is I-shaped and the first stack is disposed adjacent to the second stack such that end portions of the second stack adjoin the end leg portions of the first stack respectively as shown in Fig. 3.

As per claim 37 Elms teaches that the air gap extends uninterrupted between the center leg portion of the first stack and the second stack for the entire leg portion of the first stack as shown in Fig. 3.

However, Elms does not teach a process of adjusting the configuration of the air gap to produce a desired non-linear inductance characteristic for said inductor (as per **claim 9**). Boggavarapu teaches a process making an inductor including air gaps with two or more different width (28, 34) to provide the required inductance for the inductor as shown in Fig. 2 (see also col. 4, lines 30-37). Therefore, the inductance of the inductor can be changed by the air gaps so that the inductance of the inductor can be adjusted by changing the air gaps' widths to produce the required inductance for the inductor. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify facilitating a process of fabricating an inductor of Elms by adjusting the configuration (width) of the air gap to produce a desired inductance characteristic for the inductor as taught by Boggavarapu in order to produce a desired inductance characteristic for the inductor.

As per claims 22-24 Boggavarapu teaches that the air gap comprises a first portion (28) having a first width and a second portion (34) having a second width, the first and second widths being different as shown in Fig. 2. It would be obvious that the inductance of the inductor can be adjusted by changing the air gaps' widths or lengths to produce the required inductance for the inductor.

***Allowable Subject Matter***

8. Claims 10, 25-31 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D Kim whose telephone number is 703-308-8356. The examiner can normally be reached on Tuesday-Friday between 8:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul D Kim  
Examiner  
Art Unit 3729